Baicells Technologies North America, Inc. Comment Re FCC Proceeding 12-354 Opposing CTIA & T-Mobile Petitions to Amend the Rules for the CBRS Band

20JULY2017

Since the FCC first issued the respective NPRM in December 2012 following the PCAST recommendations for what would become the "CBRS" Citizen's Broadband Radio Service Band industry began planning strategies and investments to prepare to leverage this spectrum allocation. Following the R&O in April 2015, this activity ramped up massively, with the creation of the Wireless Innovation Forum – an entity created at the express direction of the FCC wherein it directed industry to develop rules and procedures for the Spectrum Access System (SAS) and ESC (Electronic Sensoring & Control) mechanisms. In parallel and not long after the CBRS Alliance was launched to coordinate across the burgeoning ecosystem, design business models, and educate the market place as to the astonishing opportunity presented by this thoughtful and well-considered Report & Order.

As well, tens of millions of dollars has already been invested BASED ON THE CURRENT RULES by manufacturers and other stakeholders. Indeed in our case, an entire company was launched in North America expecting this band to anchor what we expect can be over $100M just to our company in products and services within the 2nd full year of the band's opening. Today, over 1,550 "CBRS ready" LTE base stations have ALREADY been deployed by over 200 predominantly rural broadband operators serving thousands of citizens residing in underserved communities across the USA and we are barely out of the trials stage.

However, while meeting rural broadband needs is of critical value to the economic survival of communities, the opportunities presented by this band with the rules AS WRITTEN go much further. For well over a decade demand has pent up across numerous industries and market sectors as technological and productivity demands drive intelligence further and further to the edge, and with that a need to connect them to control them.

For example, utility companies in the USA – even though they are national security level critical infrastructure – are spectrum orphans (unlike their Canadian peers, for example, who have 1.8 GHz spectrum). It's frankly a national embarrassment, especially as recent news proves hacking attempts are ALREADY impacting our grid and nuclear facilities. This has forced them to cobble together proprietary and costly half-measure solutions as they struggle to modernize our grid, or to be forced to spend millions in OPEX feeding the giant mobile carriers represented by CTIA just to get reliable connectivity for IoT, video surveillance, SCADA, etc.

The producers in our energy sector, such as oil & gas companies also face the same burdens and barriers. They must agree to be held hostage by the carriers or be forced to use unreliable, interference prone Wi-Fi as they work to provide Americans our energy resources.

Cities and towns across the country also are in the same boat. Intelligent traffic systems that save lives, reduce pollution, and increase productivity by regulating traffic flow MUST be reliably connected. Security cameras – critical to manage crime and public safety, and even assist in combatting terror – must be connected with large data connections, and when leased from carriers can cost $80/mo just to service a single camera. Their choices are few: to collectively spend 10s of billions installing fiber, rely on ever more crowded and risky Wi-Fi or millions in monthly OPEX to their hostage keepers, the mobile carriers.

And these are only the outdoor applications. Indoors? The potential is endless. Healthcare agencies and providers, bound by HIPAA laws, are forced to bolt on complex technologies atop of unreliable Wi-Fi systems. Banks, now facing massive hacking risks and active measures from hostile governments, are still stuck having to use Wi-Fi.

Here we are today, finally via the CBRS band -- again where massive investments have already been made – comes the first real potential to solve these challenges with private networks. The rules as they stand thoughtfully and progressively makes use of new technological capabilities to dynamically manage spectrum in the time domain in a manner that will protect incumbents while maximizing deployment density. This follows over 80 years of managing spectrum like real estate, an inefficient and archaic methodology that sees spectrum as a private capital asset, and not as a public good to be leveraged to its fullest extent.

But these technical parts of the rules are not what makes this spectrum a potential economic powerhouse with the public (and treasury) benefits equal to or GREATER than the impact Wi-Fi has had, because anything – ANYTHING – Wi-Fi can do, technologies like LTE in GAA CBRS spectrum under the rules as written can do even better, more efficiently, more securely. Combined that with the ability to purchase PALs so. Strike that, it's the ability to purchase LOW COST PALs that make this all work so small entities can operate their private networks in a protected manner. And, that is ONLY possible if the geographic scope of a license remains by census tract. With 74k census tracts and up to 7 PALs per tract, even the smallest of school systems, the most budget constrained small town, a single hospital system, and yes, a rural wireless broadband service provider, has a fair shot to obtain a PAL. Change that to an geographic unit much larger, say one with 410 tracts, and extend the license term to 10 years and the cost of PALs becomes prohibitive, and even pointless since the geographic coverage will far exceed the limited area many small entities (like a school system, town, utility, etc.) will need. The FCC will foreclose on the potential of CBRS to be an economic powerhouse, it will perpetuate our policy of spectrum orphaning our most critical infrastructure builders from energy, to education, to public safety, to broadband.

For what? So a handful of the wealthiest companies on the planet can continue their business model of hostage keeping? The mobile petitioners argue a traditional auction will generate billions in revenue to the treasury. That's a pittance of the total economic impact that will be generated over

time under the current rules. Calculate the economic impact of Wi-Fi. That's the minimum potential of CBRS under the current rules, and the treasury will STILL see massive revenue from PAL auctions.

Through CTIA the carriers are complaining the 3 year PAL terms are too short, that this will cause them to invest less. We are not moved by this argument, as these are the same carriers who scoffed at Wi-Fi, yet it's Wi-Fi that has saved them billions in CAPEX through free offload. The same carriers are now building technologies (as are we, as co-chairs of the MuLTEfire Alliance) to use existing 5 GHz Wi-Fi bands, as guess what, they are simply leveraging technologies so they can work successfully within the existing rules regime. The complaint also rings hallow when thousands of other and smaller capitalized companies and many IT giants find the existing rules perfectly acceptable. The preemptive complaining is merely an effort to protect the monopolistic dominance they already enjoy. Don't reward their failure to embrace and invest in technological advancements.

The carriers also are dangling the magical panacea of "5G." As one of the main innovating companies in this area, we are honest enough to admit 5G remains a marketing term encompassing any number of technologies and bands. The idea that "5G" can't be accelerated to market unless the carriers can get the rules changed in their favor is as laughable as if 20 years ago they'd said Wi-Fi would have no chance unless they could dominate the ISM spectrum (that "garbage spectrum" that today saves their bacon).

Yes, there's a certain stridence to our comment, but we find both the CTIA's and T-Mobile's filings at this late date to be cynical in the extreme, and representing the worst of monopolistic strong-arming, the sort that kills innovation, crushes entrepreneurialism, and destroys job growth. Meanwhile, countless groups have been operating in good faith across every conceivable sector building mechanisms, business models, and technologies under the CURRENT rules, working together in the best of American entrepreneurial spirit to bring next generation benefits to our fellow citizens. Please don't destroy that spirit and potential simply to placate the whines of a few companies, who we all know full well, will find a way just fine to work within the existing rules – they may just have to put on try a little harder and share the road.

Sincerely,

Patrick Leary
President
Baicells Technologies North America, Inc.
(972) 800-1157